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*** YOU HAVE NEW MAIL ***

=> s dendrimer?/ti
L1         7519 DENDRIMER?/TI

=> s l1 and surface? (5a) dendrimer?
   4 FILES SEARCHED...
L2          919 L1 AND SURFACE? (5A) DENDRIMER?

=> s l2 and amino sliane
L3            0 L2 AND AMINO SLIANE

=> s l2 and amino silane
L4            8 L2 AND AMINO SILANE

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5            5 DUP REM L4 (3 DUPLICATES REMOVED)

=> d l5 bib abs 1-5

L5   ANSWER 1 OF 5  USPATFULL on STN
AN     2005:247572  USPATFULL
TI     Solid supports functionalised with phosphorus dendrimers,
       method for preparing same and uses thereof
IN     Trevisiol, Emmanuelle, Cornebarrieu, FRANCE
       Leclaire, Julien, Toulouse, FRANCE
       Pratviel, Genevieve, Toulouse, FRANCE
       Caminade, Anne-Marie, Toulouse, FRANCE
       Francois, Jean, Castenet, FRANCE
       Majoral, Jean-Piere, Ramonville, FRANCE
       Meunier, Bernard, Castenet, FRANCE
PI     US 2005214767      A1   20050929
AI     US 2003-512133     A1   20030417 (10)
       WO 2003-FR1231          20030417
                               20050525  PCT 371 date
PRAI   FR 2002-5049        20020423
DT     Utility
FS     APPLICATION
LREP   ALSTON & BIRD LLP, BANK OF AMERICA PLAZA, 101 SOUTH TRYON STREET, SUITE
       4000, CHARLOTTE, NC, 28280-4000, US
CLMN   Number of Claims: 26
ECL    Exemplary Claim: 1
DRWN   7 Drawing Page(s)
LN.CNT 1051
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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to solid supports functionalized with phosphorus-containing dendrimers, to a process for preparing them, to their use for preparing biochips and to the uses of these biochips, in particular for immobilizing molecules of interest, especially biological molecules of interest such as nucleic acids, polypeptides, lipids and proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:402333 CAPLUS
DN 143:111967
TI Study of streptavidin coated onto PAMAM **dendrimer** modified magnetite nanoparticles
AU Gao, Feng; Pan, Bi-Feng; Zheng, Wei-Ming; Ao, Li-Mei; Gu, Hong-Chen
CS Engineering Research Center for Nano Science and Technology, Shanghai Jiao Tong University, Shanghai, 200030, Peop. Rep. China
SO Journal of Magnetism and Magnetic Materials (2005), 293(1), 48-54
CODEN: JMMMDC; ISSN: 0304-8853
PB Elsevier B.V.
DT Journal
LA English
AB Polyamidoamine **dendrimer** was synthesized on the **surface** of **amino silane** modified magnetite nanoparticles. After coating of streptavidin to these dendrimer-modified magnetite nanoparticles, an up to 3.4 times higher amount of streptavidin (SA) was measured compared to magnetite nanoparticles modified with only **amino silane**. The biotin-binding capacity of SA thus increased after dendrimer modification.
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 5 MEDLINE on STN DUPLICATE 1
AN 2005122763 IN-PROCESS
DN PubMed ID: 15752777
TI **Dendrimer** modified magnetite nanoparticles for protein immobilization.
AU Pan Bi-Feng; Gao Feng; Gu Hong-Chen
CS Engineering Research Center for Nano Science and Technology, Shanghai Jiao Tong University, 1954 Huashan Road, Shanghai 200030, People's Republic of China.
SO Journal of colloid and interface science, (2005 Apr 1) Vol. 284, No. 1, pp. 1-6.
Journal code: 0043125. ISSN: 0021-9797.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 9 Mar 2005
Last Updated on STN: 14 Dec 2005
AB A cascading polyamidoamine (PAMAM) **dendrimer** was synthesized on the **surface** of magnetite nanoparticles to allow enhanced immobilization of bovine serum albumin (BSA). Characterization of the synthesis revealed exponential doubling of the surface amine from generations one through four starting with an **amino silane** initiator. Furthermore, transmission electron microscopy (TEM) revealed clear dispersion of the dendrimer-modified magnetite nanoparticles in methanol solution. The dendrimer-modified magnetite nanoparticles were used to carry out magnetic immobilization of BSA. BSA immobilizing efficiency increased with increasing generation from one to five and BSA binding amount of magnetite nanoparticles modified with G5 dendrimer was 7.7 times as much as that of magnetite nanoparticles modified with only aminosilane. There are two major factors that improve the BSA binding capacity of dendrimer-modified magnetite nanoparticles: one is that the increased surface amine can be conjugated to BSA by a chemical bond through glutaraldehyde; the other is that the available area has increased due to the repulsion of surface positive charge.

L5 ANSWER 4 OF 5 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 2
AN 2003:213466 BIOSIS
DN PREV200300213466
TI DNA extraction using bacterial magnetic particles modified with hyperbranched polyamidoamine **dendrimer**.
AU Yoza, Brandon; Arakaki, Atsushi; Matsunaga, Tadashi [Reprint Author]
CS Department of Biotechnology, Tokyo University of Agriculture and Technology, 2-24-16, koganei, Tokyo, 184-8588, Japan
tmatsuna@cc.tuat.ac.jp
SO Journal of Biotechnology, (20 March 2003) Vol. 101, No. 3, pp. 219-228. print.
ISSN: 0168-1656 (ISSN print).
DT Article
LA English
ED Entered STN: 30 Apr 2003
Last Updated on STN: 30 Apr 2003
AB A cascading hyperbranched polyamidoamine **dendrimer** was synthesized on the **surface** of bacterial magnetite from Magnetospirillum magneticum AMB-1 to allow enhanced extraction of DNA from fluid suspensions. Characterization of the synthesis revealed linear doubling of the surface amine charge from generations one through five starting with an **amino silane** initiator. Furthermore, transmission electron microscopy revealed clear dispersion of the single domain magnetite in aqueous solution. The dendrimer modified magnetic particles have been used to carry out magnetic separation of DNA. Binding and release efficiencies increased with the number of generations and those of bacterial magnetite modified with six generation dendrimer were 7 and 11 times respectively as many as those of bacterial magnetite modified with only **amino silane**.

L5 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:269399 CAPLUS
DN 134:296271
TI Manufacture of **dendrimer**-grafted organic or inorganic microparticles
IN Murota, Masamichi; Sato, Shinpei; Tsubokawa, Norio
PA Nippon Aerosil Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001106940	A2	20010417	JP 1999-282971	19991004
PRAI	JP 1999-282971		19991004		

AB The microparticles are obtained by dry coating an amino group-containing silane coupler or silicone oil on the surface of the microparticles, Michael addition reacting the amino groups with Me methacrylate, then aminating with diamine compound and repeating the above reaction until enough grafting chains occur. Thus, mixing Aerosil 200 (silica) 100 with γ-aminopropyltriethoxysilane 10 and EtOH 10 parts at 150° for 2 h gave a coated silica, 15.0 g of which was sprayed with 3.0 g Me acrylate, heated at 50° for 21 h, stripped away unreacted Me acrylate, sprayed with 3.0 g ethylenediamine, and reacted at 50° for 21 h to give a 1st generation dendrimer. The polymerization was repeated further for 7 times to attain a 8 generation dendrimer-grafted silica.

=>

=> d l10 bib abs 1-31

L10 ANSWER 1 OF 31 MEDLINE on STN
AN 2005458339 IN-PROCESS
DN PubMed ID: 16127505
TI Peripheral SH-functionalisation of carbosilane **dendrimers** including the synthesis of the model compound dimethylbis(propanethiol) **silane** and their interaction with rhodium complexes.
AU Camerano Jose A; Casado Miguel A; Ciriano Miguel A; Tejel Cristina; Oro Luis A
CS Departamento de Quimica Inorganica, Instituto de Ciencia de Materiales de Aragon, C.S.I.C.-Universidad de Zaragoza, Spain.
SO Dalton transactions (Cambridge, England : 2003), (2005 Sep 21) No. 18, pp. 3092-100. Electronic Publication: 2005-07-28.
Journal code: 101176026. ISSN: 1477-9226.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 30 Aug 2005
Last Updated on STN: 15 Dec 2005
AB Treatment of the allyl-containing compounds Me2Si(CH2CHCH2)2 and MeSi(CH2CHCH2)3 with thioacetic acid in the presence of AIBN gave Me2Si[(CH2)3SC(O)CH3]2 and MeSi[(CH2)3SC(O)CH3]3, respectively, which were reduced with LiAlH4 to the dithiols Me2Si[(CH2)3SH]2(3) and MeSi[(CH2)3SH]3(4). This protocol was applied to the first and second generations of the doubly and triply-branched carbosilane allyl dendrimers, Si[(CH2)3SiMe(CH2CHCH2)2]4(G(1)allyl-8), Si[(CH2)3SiMe{(CH2)3SiMe(CH2CHCH2)2}2]4(G(2)allyl-16), Si[(CH2)3Si(CH2CHCH2)3]4(G(1)allyl-12), and Si[(CH2)3Si{(CH2)3Si(CH2CHCH2)3}3]4(G(2)allyl-36) to give the corresponding SH functionalised **surface dendrimers** Si[(CH2)3SiMe(CH2CH2CH2SH)2]4(G(1)SH-8), G(2)SH-16, G(1)SH-12, and G(2)SH-36. Reactions of 3 with [M(acac)(diolefin)](M = Rh, Ir; diolefin = 1,5-cyclooctadiene, 2,5-norbornadiene) gave the compounds of the type [M2(mu-Me2Si[(CH2)3S]2)(diolefin)2]n. These diolefin complexes are octanuclear (n= 4) in solution while the complex [Rh2(mu-Me2Si[(CH2)3S]2)(cod)2]n(5) is tetranuclear in the solid state. The structure of 5, solved by X-ray diffraction methods, consists of a 20-membered metallomacrocycle formed by two dimethylbis(propylthiolate)**silane** moieties bridging four fragments Rh(cod) in a mu2 fashion through the sulfur atoms. Treatment of [Rh(acac)(CO)2] with 3 gave [Rh2(mu-Me2Si[(CH2)3S]2)(CO)4]n, which is a mixture of tetra (n= 2) and octanuclear (n= 4) complexes in a 2 : 1 ratio in solution, while the related complex [Rh2(mu-Me2Si[(CH2)3S]2)(CO)2(PPh3)2]2 is tetranuclear. Reactions of [Rh(acac)(L-L)](L-L = cod, (CO)2, (CO)(PPh3)) with 4 and the dendrimers G(1)SH-8, G(2)SH-16, and G(1)SH-12, gave microcrystalline solids of formulae [Rh3(MeSi[(CH2)3S]3)(L-L)3]n, [Si[(CH2)3SiMe{(CH2)3SRh(cod)}2]4]n ([G(1)Rh(cod)-8]n), [Si[(CH2)3Si{(CH2)3SRh(cod)}3]4]n([G(1)Rh(cod)-12]n), etc., which presumably are tridimensional coordination polymers.

L10 ANSWER 2 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:238563 CAPLUS
DN 142:294340
TI Compositions and methods using **dendrimer**-treated microassays
IN Huang, Haoqiang; Braman, Jeffrey Carl
PA Stratagene California, USA
SO U.S. Pat. Appl. Publ., 20 pp., Cont. of U.S. Ser. No. 863,748, abandoned.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005059068	A1	20050317	US 2004-938807	20040910
PRAI US 2001-863748	B1	20010523		

AB The present invention provides a chemical reactive surface able to covalently react with substances containing a hydroxyl group and/or amine group,

comprising a solid **surface** having an activated **dendrimer** polyamine covalently bonded to said **surface** through a **silane** containing reagent, wherein the dendrimer polyamine can covalently bind the substance comprising a hydroxyl group and/or amino group. The present invention further provides a method for producing chemical reactive surfaces for binding moieties comprising a hydroxyl group and/or amine group, as well as kits comprising the chemical reactive surface of the invention.

L10 ANSWER 3 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:551221 CAPLUS
DN 139:118096
TI Chemoselective **dendrimers** for chemical sensors in devices for selective mol. recognition
IN Houser, Eric; McGill, Robert
PA USA
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003135005	A1	20030717	US 2002-46298	20020116
	US 6617040	B2	20030909		
	WO 2003059991	A1	20030724	WO 2002-US28121	20020916
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002341596	A1	20030730	AU 2002-341596	20020916
PRAI	US 2002-46298	A	20020116		
	WO 2002-US28121	W	20020916		

AB The device for selective mol. recognition comprises a sensing portion including a substrate having coated layer containing a dendrimer having (1) a core portion; (2) ≥1 unsatd. arms extending radially from the core portion; and (3) ≥1 halogen substituted alc. or phenol group substituted at the terminals of at least one of the branches. The device is used to detect the mols. of a hydrogen bond accepting vapor such as organophosphorus or nitroarom. species.

L10 ANSWER 4 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:259963 CAPLUS
DN 138:294872
TI Electrophotographic carrier having coating layer containing resin and nitrogen-based **dendrimer**, developer, and image-forming apparatus
IN Yamashita, Masahide; Iwamoto, Yasutaka; Mochizuki, Masaru; Kondo, Fumio; Suzuki, Kosuke; Koike, Takayuki; Umemura, Kazuhiko; Sugiura, Hideki; Tamura, Tomoyoshi
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003098759	A2	20030404	JP 2001-288231	20010921
PRAI	JP 2001-288231		20010921		

AB The electrophotog. carrier comprises a coating layer which contains a resin and a N-based dendrimer. The N-based dendrimer 1-40% in the coating layer contains propyleneimine and/or trimethyleneimine as a constituting element, and has a weight average mol. weight 20,000-400,000. The **surface**

of the **dendrimer** is modified by a vinyl-containing group and/or a component subjected to condensation reaction. The image-forming apparatus equipped with a toner-recycling device is also claimed. The use of the dendrimer in the coating layer made a fluctuation of the charging ability extremely small.

L10 ANSWER 5 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:893969 CAPLUS
DN 139:221422
TI Optical behavior and **surface** morphology of the azobenzene functionalized **dendrimer** in Langmuir and Langmuir-Blodgett monolayers
AU Shin, H.-K.; Kim, J.-M.; Kwon, Y.-S.; Park, E.; Kim, C.
CS Department of Electrical Engineering and CIIPMS, Dong-A University, Saha-gu, Pusan, 604-714, S. Korea
SO Optical Materials (Amsterdam, Netherlands) (2003), 21(1-3), 389-394
CODEN: OMATET; ISSN: 0925-3467
PB Elsevier Science B.V.
DT Journal
LA English
AB We synthesized a dendrimer containing light switchable azobenzene group. The chemical structure was verified by using NMR and UV spectroscopy. We firstly investigated the monolayer behavior by using π-A isotherm with light irradiation at the air/water interface. As a result, the monolayer of dendrimer with azobenzene group showed the reversible photoswitching behavior by the isomerization of azobenzene group in the periphery. From the absorbance spectrum by UV irradiation and heat treatment, we can see that the absorbance in the UV region decreases with the increases of the UV irradiation time, but LB monolayers not absorbance shift. The results indicate that the azobenzene dendrimer could be photoisomerized reactions. In the surface morphol. by AFM, the introduction of azobenzene group coagulates G4-48 Azo dendrimer and forms network dendrimers. This result strongly suggests that a dendrimer with azobenzene group can be applied to high efficient photoreaction device of mol. level.
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

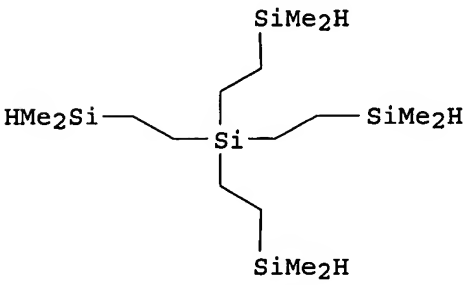
L10 ANSWER 6 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:191955 CAPLUS
DN 132:322329
TI A structural study of carbosilane **dendrimers** versus polyamidoamine
AU Elshakre, M.; Atallah, A. S.; Santos, S.; Grigoras, S.
CS Department of Materials, Zurich, CH-8092, Switz.
SO Computational and Theoretical Polymer Science (2000), 10(1/2), 21-28
CODEN: CTPSFJ; ISSN: 1089-3156
PB Elsevier Science Ltd.
DT Journal
LA English
AB Several types of substituted carbosilane-based dendrimers are studied in comparison with polyamidoamine (PAMAM), using mol. mechanics approach, to evaluate the shape and steric interactions when the generation number (G) increases. A scaled van der Waals energy parameter, the scaled steric energy, is defined, and used, to compare the steric repulsion in these dendrimers. The calcns. indicate that the steric repulsions, between the end groups at the **surface** of **dendrimers**, do not increase for higher generations of such macromols. D. calcns. show that this property decreases with the increase of G. The moment of inertia calcns. show that the shape of the considered dendrimers is asym. for lower generations and becomes spherical at higher generations. The shape of the carbosilane dendrimers is more spherical than PAMAM. Higher generations can afford the increased number of terminal groups at the surface of the macromols., without increase of the d. in this region, these factors (steric repulsion between the end groups at the surface, or high d.) would not impede the chemical to build higher generations of completely branched dendrimers.
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 7 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:83981 CAPLUS
DN 132:223161
TI Modification of **Surface** Interactions and Friction by Adsorbed **Dendrimers**: 2. High-**Surface**-Energy -OH-Terminated Carbosilane **Dendrimers**
AU Zhang, Xueyan; Klein, Jacob; Sheiko, Sergei S.; Muzafarov, Aziz M.
CS Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, 76100, Israel
SO Langmuir (2000), 16(8), 3893-3901
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English
AB The interactions between two mica **surfaces** bearing a fourth-generation carbosilane **dendrimer** (modified to expose -OH groups on its outer surface) were studied across a toluene medium, using a surface force balance capable of measuring shear as well as normal forces. Normal force measurements indicate that the dendrimers adsorb from dilute toluene solution (ca. 5 + 10-4 weight/weight) as a monolayer on each surface. Two such interacting surfaces experience a longer-ranged van der Waals attraction followed by strong short-range adhesion (probably of dipolar origin) as the adsorbed dendrimers come into contact. Within the range of our parameters, the dendrimer layers were incompressible normal to the surfaces. Friction vs. load profiles were measured at different shear velocities, revealing marked stick-slip sliding, whereas the magnitude of the yield stress increased with longer times of contact and with normal pressure. This suggests that over time scales comparable with the exptl. times the interacting layers rearrange to optimize their interfacial shear strength. The behavior of these -OH-exposing carbosilane dendrimers differs qual. from that of CH3-exposing poly(propyleneimine) dendrimers studied earlier, a difference attributable to the much more polar nature of the hydroxyl groups.
RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 8 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:444585 CAPLUS
DN 131:228824
TI 1,2-Branched carbosiloxane-**dendrimers** with Main-Group element and transition-metal modified surfaces
AU Bruning, Karin; Luhmann, Bettina; Lang, Heinrich
CS Institut Chemie, Technische Univ. Chemnitz, Chemnitz, D-09111, Germany
SO Zeitschrift fuer Naturforschung, B: Chemical Sciences (1999), 54(6), 751-756
CODEN: ZNBSEN; ISSN: 0932-0776
PB Verlag der Zeitschrift fuer Naturforschung
DT Journal
LA German
OS CASREACT 131:228824
AB The 1st- and 2nd-generation dendrimers Si[O(CH2)3SiMe(OCH2C.tplbond.CH)2]4 (I) and Si{O(CH2)3SiMe[O(CH2)3SiMe(OCH2C.tplbond.CH)2]2}4 (II) were prepared by the reaction of Si[O(CH2)3SiMeCl2]4 or Si{O(CH2)3SiMe[O(CH2)3SiMeCl2]2}4 with HOCH2C.tplbond.CH in the presence of NEt3. The terminal propargyloxy units of I and II were transferred to Co2(CO)8 to give Si{O(CH2)3SiMe[(η2-OCH2C.tplbond.CH)Co2(CO)6]2}4 and Si{O(CH2)3SiMe(O(CH2)3SiMe[(η2-OCH2C.tplbond.CH)Co2(CO)6]2)2}4. All compds. were characterized by elemental anal., spectroscopic studies (IR, 1H-, 13C{1H}-, 29Si{1H}NMR), and GPC studies.
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 9 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:418582 CAPLUS
DN 131:214334
TI Synthesis and characterisation of silanol-functionalised **dendrimers**
AU Coupar, Pamela I.; Jaffres, Paul-Alain; Morris, Russell E.
CS School of Chemistry, University of St. Andrews, St. Andrews, KY16 9ST, UK

SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1999), (13), 2183-2188
CODEN: JCDTBI; ISSN: 0300-9246
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 131:214334
GI



I

AB A number of carbosilane **dendrimers** derivatized on their external **surface** by silanol groups and with silicon, cyclotetrasiloxane, and octa(silsesquioxane) cores have been synthesized and characterized. The new mols. are prepared by repetitive hydrosilation/alkenylation reactions, and then careful hydrolysis of Si-Cl groups in one of two ways produces dendrimers with external Si-OH groups. Various mols. with three, four and eight vinyl groups were used as the starting mols. to produce dendrimers of different sizes. The first-generation dendrimer (I) based on a tetravinylsilane core has been characterized by single crystal X-ray diffraction.
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 10 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:762330 CAPLUS
DN 130:115406
TI Spreading of Carbosilane **Dendrimers** at the Air/Water Interface
AU Sheiko, Sergei S.; Buzin, Alexander I.; Muzafarov, Aziz M.; Rebrov, Evgenij A.; Getmanova, Elena V.
CS Organische Chemie III/Makromolekulare Chemie and Angewandte Physik, Universitaet Ulm, Ulm, 89069, Germany
SO Langmuir (1998), 14(26), 7468-7474
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English
AB Spreading of carbosilane dendrimers containing trimethylsilyl or hydroxyethyl end groups was investigated at the air/water interface. Our observations suggest that the monodisperse, globular mols. of the carbosilane dendrimer with hydroxyl end groups ordered into layers on the water surface. In contrast to the hydrophobic trimethylsilyl ends, the hydroxyl-functionalized dendrimers formed a monolayer at the air/water interface. Surface pressure vs. film area isotherms were collected and showed full reversibility, irresp. of the degree of compression. Three equilibrium states of the OH-terminated dendrimer were identified depending on the mol. area. (i) The monolayer was compressible over a remarkably broad range of mol. areas from 1200 to 650 Å2. In the transition region, the osmotic pressure varied with concentration according to the power law π/kT .apprx. cm with m = 15. In combination with the large monolayer thickness of (1.4 ± 0.1) nm, the steep power law indicates a globular shape for the adsorbed mols. characterized by dense packing of chain segments. (ii) In the range between 650 and 350 Å2, the dendrimer underwent a sharp transition, presumably into a bilayer structure. Since the surface pressure was almost invariant during compression, the transition is considered to be a first-order phase transition. (iii) Compression beyond 350 Å2 occurred at a constant pressure, as is typical for an isotropic

liquid film. The spreading behavior of the OH-terminated dendrimer was compared with that of a polydisperse hyperbranched polymer of identical chemical composition In contrast to the dendrimer, the hyperbranched polymer did not show any transitions and exhibited a spreading behavior similar to that of isotropic liqs.

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 11 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:496583 CAPLUS
DN 129:189869
TI Segmental Dynamics in **Dendrimers** with Perfluorinated End Groups: A Study Using Quasielastic Neutron Scattering
AU Stark, B.; Stuehn, B.; Frey, H.; Lach, C.; Lorenz, K.; Frick, B.
CS Fakultaet fuer Physik, Universitaet Freiburg, Freiburg, D-79104, Germany
SO Macromolecules (1998), 31(16), 5415-5423
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
AB A series of carbosilane dendrimer generations, GxRF6 (x = 1-3) with perfluorohexyl (-C6F13) groups on the **surface** and one **dendrimer** G3 without these end groups, have been studied using X-ray scattering and quasielastic neutron scattering. The GxRF6 form generation dependent superstructures as a result of the microphase separation between the end groups and the carbosilane core. The helical end groups tend to arrange in layers between the carbosilane domains. The dynamic structure factor was measured with two backscattering spectrometers (IN10, IN16). For GxRF6 it was composed of two separable contributions referring to the segmental diffusion in the dendrimer core and the rotational diffusion of the end groups. G3 shows only one component. The segmental diffusion in the G3RF6 is reduced by a factor of 7.4 compared to G3, demonstrating the influence of the end groups on the segmental diffusion. A universal length controls the segmental diffusion of the four dendrimers. It gives rise to a characteristic scattering vector dependence of the quasielastic line width. Increasing generation number slows down the segmental diffusion and extends the lifetime of a local dynamical process. The rotational diffusion of the end groups is not strongly affected by x. It is less strongly dependent on temperature than the segmental diffusion.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 12 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:226828 CAPLUS
DN 128:257851
TI Radially layered copoly(amidoamine-organosilicon) **dendrimers**
IN Dvornic, Petar R.; Deleuze-Jallouli, Agnes M.; Swanson, Douglas; Owen, Michael James; Perz, Susan Victoria
PA Dow Corning Corp., USA; Michigan Molecular Institute
SO U.S., 7 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5739218	A	19980414	US 1997-867143	19970602
EP 882755	A1	19981209	EP 1998-108955	19980516
EP 882755	B1	20020814		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11029638	A2	19990202	JP 1998-151400	19980601
PRAI US 1997-867143	A	19970602		

AB A composition comprising a radially layered copolymeric dendrimer having a hydrophilic poly(amidoamine) or poly(propyleneimine) interior and a hydrophobic organosilicon exterior is prepared by reacting a hydrophilic **dendrimer** having NH2 **surface** groups with an organosilicon compound in the presence of a solvent. The **dendrimers**

are typically prepared by **surface** modifications of an ethylene diamine core PAMAM dendrimer with (3-acryloxypropyl)methyldimethoxysilane, (3-acryloxypropyl)bis(vinyldimethylsiloxy)methylsilane, (3-acryloxypropyl)tris(trimethylsiloxy)**silane**, chloromethyltrimethylsilane, or chloromethyldimethylvinylsilane, to varying degrees of surface coverage. The **dendrimers** with less completely covered organosilicon **surfaces** are water soluble, and have considerable surface activity, the best of which lowered the surface tension of water to less than 30 mN/m. Areas in their surface, according to the Gibbs adsorption isotherm, are surprisingly small, i.e., of the order of 100 Å2 /mol. More completely hydrophobic dendrimers are water insol., and form spread monolayers on water, capable of sustaining surface pressures over 40 mN/m. Areas per mol. are in the 1,000 Å2 /mol range.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 13 OF 31 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:488803 CAPLUS
TI Preparation and evaluation of radially layered copoly(amidoamine-organosilicon) (PAMAMOS) **dendrimers**
AU de Leuze-Jallouli, Agnes M.; Swanson, Douglas R.; Perz, Susan V.; Owen, Michael J.; Dvornic, Petar R.
CS Michigan Molecular Institute, Midland, MI, 48640, USA
SO Book of Abstracts, 214th ACS National Meeting, Las Vegas, NV, September 7-11 (1997), PMSE-010 Publisher: American Chemical Society, Washington, D. C.
CODEN: 64RNAO
DT Conference; Meeting Abstract
LA English
AB Radially layered copoly (amidoamine-organosilicon), PAMAMOS, dendrimers having hydrophilic polyamidoamine (PAMAM) interior and hydrophobic (i.e., oleophilic) organosilicon (OS) exterior have been prepared for the first time by two different synthetic approches. These included: (a) a Michael addition of (3-acryloxypropyl)methyldimethoxysilane and (3-acryloxypropyl)tris(trimethylsiloxy)**silane**, and (b) a haloaddn. of chloromethyltrimethylsilane and chloromethyldimethylvinylsilane to -NH2 **surface** groups of ethylenediamine core PAMAM **dendrimers**. It was found that the extent of surface coverage could be controlled by appropriate selection of the synthetic conditions used. The obtained products were characterized by 1H, 13C and 29Si NMR, and by DSC and TGA.

L10 ANSWER 14 OF 31 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2004-434733 [41] WPIDS
DNN N2004-343658 DNC C2004-163401
TI Extracting nucleic acid or protein using **dendrimer** having an amino group, involves extracting a nucleic acid or protein by the amino group present on the **dendrimer**.
DC B04 D16 S03
IN FUKUSHIMA, K; MATSUNAGA, T; SATOU, S; TAKEYAMA, H; YOZA, B
PA (MATS-I) MATSUNAGA T; (YOKG) YOKOGAWA DENKI KK; (YOKG) YOKOGAWA ELECTRIC CORP
CYC 2
PI JP 2004150797 A 20040527 (200441)* 13
US 2005260600 A1 20051124 (200578)
JP 3756477 B2 20060315 (200620) 12
ADT JP 2004150797 A JP 2002-269867 20020917; US 2005260600 A1 US 2003-647232 20030826; JP 3756477 B2 JP 2002-269867 20020917
FDT JP 3756477 B2 Previous Publ. JP 2004150797
PRAI JP 2002-269867 20020917
AN 2004-434733 [41] WPIDS
AB JP2004150797 A UPAB: 20040629
NOVELTY - Extracting (M1) nucleic acid or protein using dendrimer having an amino group comprising extracting a nucleic acid or protein by the amino group present on the dendrimer, where multilayered **dendrimer** is produced on the **surface** of microparticles and amino group is produced on the **surface** of the **dendrimer**, is new.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a dendrimer composition comprising multilayer dendrimer by which repeating

combination is carried out at the surface of the microparticle.
USE - (MI) is useful for extracting nucleic acid or protein by using dendrimer (claimed).
DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of dendrimer. (Drawing includes non-English language text).
Dwg.1/4

L10 ANSWER 15 OF 31 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2002-328314 [36] WPIDS
DNN N2002-257582 DNC C2002-094797
TI Preparing biomolecular monolayer useful for preparing kits and biosensors for disease diagnosis, by reacting functional **dendrimers** on metal or glass **surface** with biomolecules e.g. protein, antigen, antibody, enzyme.
DC B04 D16 P34
IN HONG, M Y; KIM, H S; YOON, H C; HONG, M; KIM, H; YOON, H
PA (KOAD) KOREA ADV INST SCI & TECHNOLOGY; (HONG-I) HONG M; (KIMH-I) KIM H; (YOON-I) YOON H
CYC 2
PI US 2002006626 A1 20020117 (200236)* 9
KR 2002007083 A 20020126 (200252)
KR 377946 B 20030329 (200353)
US 2003207335 A1 20031106 (200374)
ADT US 2002006626 A1 US 2001-795604 20010228; KR 2002007083 A KR 2000-40829 20000715; KR 377946 B KR 2000-40829 20000715; US 2003207335 A1 Div ex US 2001-795604 20010228, US 2003-460808 20030611
FDT KR 377946 B Previous Publ. KR 2002007083
PRAI KR 2000-40829 20000715
AN 2002-328314 [36] WPIDS
AB US2002006626 A UPAB: 20020610
NOVELTY - Preparing biomolecular monolayer, comprising reacting metal or glass surface with amine-terminated or succinimide-terminated alkanethiol for 1-2 hours to obtain self-assembled monolayer (I) that is reacted with amine-terminated, or N-hydroxysuccinimide-modified, carboxyl-terminated dendrimers (D) to give (D) monolayer (II), and reacting (II) with protein, antigen, antibody, enzyme receptor or ligand, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) preparing biomolecular monolayer based on strong interaction between avidin and biotin, comprising reacting (I) on metal or glass surface with amine-terminated (D) to obtain (II), reacting (II) with biotin to give biotinylated (II), and reacting biotinylated (II) with avidin to give avidin monolayer which is reacted with biotin-modified biomolecules;
(2) preparing microarray of biomolecules by reacting metal surface or glass surface with a solution of alkane thiol or derivatized **silane** with amine reactive functionality to obtain (I), reacting (I) with amine-terminated (D) to give micropattern of (D), and reacting the patterned (D) with a biomolecule of protein, antigen, antibody, enzyme receptor or ligand; and
(3) preparing microarray of biomolecules based on strong interaction between avidin and biotin which involves reacting micropattern of (D) with biotin to obtain biotin-modified microarray of (D), reacting the micropatterned, biotin-terminated (D) with avidin to give a microarray of avidin, and reacting the avidin microarray with the biotinylated biomolecule of protein, antigen, antibody, enzyme, receptor or ligand.
USE - Preparing biomolecular monolayers, where the biomolecule contains amine groups or sugar chains (claimed). The method is useful for preparing kits and biosensors for disease diagnosis and compound analysis using more recently, integrated high-throughput analyzing system such as development of protein chips.
ADVANTAGE - Homogeneous high density monolayer of biomolecules can be prepared, and consideration of covalent bonding or orientation of proteins is not necessary.
DESCRIPTION OF DRAWING(S) - The drawing shows the diagram of dendrimer structure containing amine chain-end groups.
Dwg.1/4

L10 ANSWER 16 OF 31 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

AN 1999-387490 [33] WPIDS
DNC C1999-114153
TI Composition comprising **dendrimer** based network and e.g. metal used e.g. to prepare metals, metal salts, organic compound or organometallic compounds..
DC A26 A28 A96 A97 B07 C07 D15 D21 D22 E21 E24 G02 G04 J01 J04 K07 L02 M25
IN BALOGH, L; DELEUZE-JALLOULI, A M; DVORNIC, P R; OWEN, M J; PERZ, S V; SPINDLER, R
PA (DOWO) DOW CORNING CORP; (MICH-N) MICHIGAN MOLECULAR INST; (DEND-N) DENDRITECH INC
CYC 27
PI EP 928813 A1 19990714 (199933)* EN 17
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
US 5938934 A 19990817 (199939)
JP 11263837 A 19990928 (199952) 13
ADT EP 928813 A1 EP 1999-100318 19990112; US 5938934 A US 1998-6573 19980113; JP 11263837 A JP 1999-6781 19990113
PRAI US 1998-6573 19980113
AN 1999-387490 [33] WPIDS
AB EP 928813 A UPAB: 20040210
NOVELTY - Composition comprising metal cation, metal salt, metal oxide, elemental metal, water soluble organic molecule or water soluble organometallic molecule adsorbed, absorbed or encapsulated in dendrimer based network.

DETAILED DESCRIPTION - A composition comprises a metal cation, a metal salt, a metal oxide, an elemental metal, a water soluble organic molecule or a water soluble organometallic molecule adsorbed, absorbed or encapsulated in a dendrimer based network with hydrophilic and hydrophobic nanoscopic domains. The dendrimer based network comprises a crosslinked product of a radially layered copolydendrimer with a hydrophilic interior and hydrophobic organosilicon exterior terminated with reactive end groups and is prepared by reacting a hydrophilic **dendrimer** containing amino **surface** groups with an organosilicon compound in the presence of a solvent.

An INDEPENDENT CLAIM is included for recovery of metal cations from water by contacting the water with a demdrimer based network as above.

USE - 4 Uses are claimed:

(1) preparation of organic, inorganic or organometallic compounds comprising reacting a reagent with the metal cation in the composition;

(2) preparation of elemental metals, metal oxides, metal sulfides and other metal salts comprising reducing the metal cation in the composition;

(3) preparation of metal oxides comprising oxidizing the metal cation;

(4) preparation of organic and/or organometallic compounds comprising reacting an organic reagent with the water soluble organic and/or organometallic molecule in the composition.

The dendrimer based network is used as a nanoscopic sponge for electrophilic guest moieties and can be used to encapsulate metals, metal ions, metal oxides, metal sulfides, metal salts or water insoluble organic or organometallic molecules.

Dwg.0/3

L10 ANSWER 17 OF 31 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1997-457496 [42] WPIDS
DNC C1997-146062
TI Organosilicon **dendrimer**, used as olefin polymerisation catalyst - including Gp-IV metal-containing arm, having high surface area and porosity, and having active end or interior group substituents.
DC A18 A26
IN SEYFERTH, D; WYRWA, R; WYRWA, R H
PA (MASI) MASSACHUSETTS INST TECHNOLOGY
CYC 74
PI WO 9732918 A2 19970912 (199742)* EN 94
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN

AU 9723284 A 19970922 (199804)
ADT WO 9732918 A2 WO 1997-US4139 19970305; AU 9723284 A AU 1997-23284 19970305
FDT AU 9723284 A Based on WO 9732918
PRAI US 1996-621290 19960322; US 1996-611495 19960305
AN 1997-457496 [42] WPIDS
AB WO 9732918 A UPAB: 19971021
An organosilicon dendrimer (D) comprises a dendrimer arm further including a metal-containing unit including a Gp=IV metal selected from Ti, Zr and Hf. Also claimed is the synthesis of such a dendrimer comprising reacting a silicon hydride with a core molecule including a reactive functional group. in the presence of a hydrosilylation catalyst to produce an intermediate organosilicon dendrimer, reacting the intermediate to introduce an unsaturated organic functional group, and repeating the reactions 1-10 times using the formed intermediate dendrimer as the core molecule to produce a Gn generation organosilicon dendrimer, where n = 1-10 and Gn = generation number, and reacting this Gn generation dendrimer with a Group 4 metal-containing reagent to form (D). Also claimed are: production of (D) by subjecting monomers including a Si-H bond(s) and at least two functional groups including a terminal =CH2 bond, to hydrosilylation, then reacting the intermediate dendromer with the metal-containing reagent; production of (D) by core-based procedures; a method for **silane** dehydrogenative condensation polymerisation comprising polymerising **silane** monomers using (D) as catalyst; and a method for polymerising an olefin using (D) as catalyst.
USE - As olefin (co)polymerisation catalysts and **silane** polymerisation catalysts.
ADVANTAGE - The **dendrimers** have a high **surface** area and porosity, and can be prepared having end or interior group substituents with desired chemical activity to provide high catalytic activity.
Dwg.0/4

L10 ANSWER 18 OF 31 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1997-457494 [42] WPIDS
DNC C1997-146060
TI Olefin polymerisation in gas or solution phase - using organo silicon **dendrimer** catalyst having Group-IV metal-containing end or interior group substituents, high surface area and porosity, and high activity.
DC A18
IN BECKE, S; FRANZ, U W; SEYFERTH, D; WYRWA, R
PA (FARB) BAYER AG; (FARB) BAYER CORP; (MASI) MASSACHUSETTS INST TECHNOLOGY
CYC 75
PI WO 9732908 A1 19970912 (199742)* EN 41
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN
AU 9722133 A 19970922 (199804)
US 6313239 B1 20011106 (200170)
ADT WO 9732908 A1 WO 1997-US4135 19970305; AU 9722133 A AU 1997-22133 19970305; US 6313239 B1 US 1996-611482 19960305
FDT AU 9722133 A Based on WO 9732908
PRAI US 1996-611482 19960305
AN 1997-457494 [42] WPIDS
AB WO 9732908 A UPAB: 19971021
A method for polymerising an olefin comprises contacting olefin monomers with an organosilicon dendrimer catalyst including a dendrimer arm including a Group IV metal comprising Ti, Zr and/or Hf, so that the monomers are polymerised to form a polyolefin.
Preferably a co-catalyst is also used. The co-catalyst is selected from methyl alumoxane (MAO), B(C6F5), a Ph3C+ salt of the (C6F5)4B- anion, and an organic ammonium salt of the (C6F5)4B- anion. The olefin monomers comprise: ethylene; alpha -olefin monomers, preferably propylene, 1-butene, styrene or a higher alpha -olefin; cyclic olefins, preferably cyclopentene or norbornene; and 1,3-dienes, preferably 1,3-butadiene or isoprene. The monomers may include first and second monomers having different chemical compositions which are copolymerised to form a

copolymer, preferably selected from ethylene, alpha -olefins, cyclic olefins and/or 1,3-dienes.

USE - In olefin (co)polymerisations in solution or gas phase. The catalysts are also used in the dehydrogenation condensation of **silane** monomers to form polysilane.

ADVANTAGE - The **dendrimers** have high **surface** area and porosity and can be prepared having end or interior group substituents with a desired chemical activity, for use as high activity catalysts.

Dwg.0/3

L10 ANSWER 19 OF 31 USPATFULL on STN
AN 2006:80212 USPATFULL
TI Substrate with attached **dendrimers**
IN Rasmussen, Jerald K., Stillwater, MN, UNITED STATES
Hembre, James I., Plymouth, MN, UNITED STATES
PA 3M Innovative Properties Company (U.S. corporation)
PI US 2006068204 A1 20060330
AI US 2004-954862 A1 20040930 (10)
DT Utility
FS APPLICATION
LREP 3M INNOVATIVE PROPERTIES COMPANY, PO BOX 33427, ST. PAUL, MN, 55133-3427, US
CLMN Number of Claims: 36
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1558
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Articles and methods of making articles are provided. The articles have a dendrimeric material attached to a substrate. The dendrimeric material, an attachment group connecting the dendrimeric material to the substrate, or both the dendrimeric material and the attachment group can be formed by a ring-opening reaction of an azlactone group with a nucleophilic group such as a hydroxyl group, primary amino group, or secondary amino group.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 20 OF 31 USPATFULL on STN
AN 2004:28452 USPATFULL
TI Pneumatic tire having a rubber component containing a **dendrimer**
IN Frank, Uwe Ernst, Marpingen, GERMANY, FEDERAL REPUBLIC OF
Visel, Friedrich, Bofferdange, LUXEMBOURG
Materne, Thierry Florent Edme, Richfield, OH, UNITED STATES
Zimmer, Rene Jean, Howald, LUXEMBOURG
Lauer, Wolfgang, Mersch, LUXEMBOURG
Weydert, Marc, Luxembourg, LUXEMBOURG
Schildbach, Thomas, Eischen, LUXEMBOURG
Lechenbohmer, Annette, Ettelbruck, LUXEMBOURG
Jozef Klinkenberg, Maurice Peter Catharina, Gosseldange, LUXEMBOURG
PA The Goodyear Tire & Rubber Company (non-U.S. corporation)
PI US 2004020576 A1 20040205
US 6889735 B2 20050510
AI US 2003-352844 A1 20030128 (10)
RLI Continuation-in-part of Ser. No. US 2001-912208, filed on 24 Jul 2001, ABANDONED
PRAI US 2000-222723P 20000803 (60)
DT Utility
FS APPLICATION
LREP The Goodyear Tire & Rubber Company, Intellectual Property Law Department 823, 1144 East Market Street, Akron, OH, 44316-0001
CLMN Number of Claims: 15
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 868
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB There is disclosed a pneumatic tire having a rubberized component comprising:

(a) 100 parts by weight of at least one rubber containing olefinic

unsaturation; and

(b).1 to 50 phr of a dendrimer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 21 OF 31 USPATFULL on STN
AN 2003:294320 USPATFULL
TI Process for preparing monolayers and microarrays of biomolecules by using **dendrimers**
IN Kim, Hak-Sung, Taejon, KOREA, REPUBLIC OF
Yoon, Hyun-Chul, Seoul, KOREA, REPUBLIC OF
Hong, Mi-Young, Taejon, KOREA, REPUBLIC OF
PI US 2003207335 A1 20031106
AI US 2003-460808 A1 20030611 (10)
RLI Division of Ser. No. US 2001-795604, filed on 28 Feb 2001, ABANDONED
PRAI KR 2000-4082 20000715
DT Utility
FS APPLICATION
LREP KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614
CLMN Number of Claims: 12
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 400
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to a process for preparing monolayers and microarrays of biomolecules by reacting functionalized **dendrimers** on a solid **surface** with biomolecules such as proteins, antigens, antibodies, enzymes, ligands, receptors, and the like. The present invention can be widely applied to the areas including preparation of kits and biosensors for disease diagnosis and compound analyses using the ascribed biomolecules as target substances, and more recently, integrated high-throughput analyzing system such as development of protein chips.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 22 OF 31 USPATFULL on STN
AN 2002:133937 USPATFULL
TI Pneumatic tire having a rubber component containing a **dendrimer**
IN Frank, Uwe Ernst, Marpingen, GERMANY, FEDERAL REPUBLIC OF
Visel, Friedrich, Bofferdange, LUXEMBOURG
Materne, Thierry Florent Edme, Viville, BELGIUM
Zimmer, Rene Jean, Howald, LUXEMBOURG
Lauer, Wolfgang, Mersch, LUXEMBOURG
Weydert, Marc, Luxembourg, LUXEMBOURG
Schildbach, Thomas, Eischen, LUXEMBOURG
Lechtenbohmer, Annette, Ettelbruck, LUXEMBOURG
Klinkenberg, Maurice Peter Catharina Jozef, Gosseldange, LUXEMBOURG
PI US 2002068796 A1 20020606
AI US 2001-912208 A1 20010724 (9)
PRAI US 2000-222723P 20000803 (60)
DT Utility
FS APPLICATION
LREP The Goodyear Tire & Rubber Company, Patent & Trademark Department - D/823, 1144 East Market Street, Akron, OH, 44316-0001
CLMN Number of Claims: 12
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 734
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB There is disclosed a pneumatic tire having a rubberized component comprising:

(a) 100 parts by weight of at least one rubber containing olefinic unsaturation; and

(b) 1 to 50 phr of a dendrimer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 23 OF 31 USPATFULL on STN
AN 2002:133936 USPATFULL
TI Inorganic-organic hybrid polymers composed of nano-particles on the **surface** using **dendrimers** and manufacturing method thereof
IN Won, Jongok, Seoul, KOREA, REPUBLIC OF
Kang, Yong Soo, Seoul, KOREA, REPUBLIC OF
Jung, Bum Suk, Seoul, KOREA, REPUBLIC OF
Choun, Jee Won, Seoul, KOREA, REPUBLIC OF
PI US 2002068795 A1 20020606
US 6590056 B2 20030708
AI US 2001-860531 A1 20010521 (9)
PRAI KR 2000-72959 20001204
DT Utility
FS APPLICATION
LREP ROSENBERG, KLEIN & LEE, 3458 ELLICOTT CENTER DRIVE-SUITE 101, ELLICOTT CITY, MD, 21043
CLMN Number of Claims: 7
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 606
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is an inorganic-organic hybrid polymer composed of nano-particles on the **surface** using a **dendrimer** and a manufacturing method thereof, in which nanometer-sized inorganic (metal) particles are uniformly dispersed across the surface of the polymer and available as optically, electrically and magnetically functional materials. The method includes the steps of: forming a functional anhydride group on a polymer-based matrix; selectively adding metal or inorganic salts to the dendrimer to prepare either of dendrimer-metal precursor solution or dendrimer-inorganic particle solution; inducing the reaction between the functional anhydride group of the surface of polymer matrix with the solution to form a chemical bond between the matrix and the dendrimer; and reducing the metal ions or inorganic particle by irradiation of light.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 24 OF 31 USPATFULL on STN
AN 2001:197132 USPATFULL
TI Olefin polymerization with group 4 metal-containing organosilicon **dendrimers**
IN Seyferth, Dietmar, Lexington, MA, United States
Wyrwa, Ralf, Jena, Germany, Federal Republic of
Franz, Uli W., Pittsburgh, PA, United States
Becke, Sigurd, Cologne, Germany, Federal Republic of
PA Bayer Corporation, United States (U.S. corporation)
Bayer A.G., United States (non-U.S. corporation)
Massachusetts Institute of Technology, United States (U.S. corporation)
PI US 6313239 B1 20011106
AI US 1996-611482 19960305 (8)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Teskin, Fred
LREP Wolf, Greenfield & Sacks P.C.
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1225
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Group 4 metal-containing organosilicon dendrimers are described. Also described are methods for synthesizing the dendrimers. The dendrimers can be useful in several applications including as olefin polymerization and copolymerization catalysts and as **silane** polymerization catalysts.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 25 OF 31 USPATFULL on STN
AN 2000:77018 USPATFULL
TI High generation radially layered **dendrimers**
IN Dvornic, Petar R., Midland, MI, United States
deLeuze-Jallouli, Agnes M., Clearwater, FL, United States
Owen, Michael James, Midland, MI, United States
Perz, Susan Victoria, Essexville, MI, United States
PA Dow Corning Corporation, Midland, MI, United States (U.S. corporation)
Dendritech, Incorporated, Midland, MI, United States (U.S. corporation)
PI US 6077500 20000620
AI US 1999-272096 19990318 (9)
DT Utility
FS Granted
EXNAM Primary Examiner: Woodward, Ana
LREP De Cesare, James L.
CLMN Number of Claims: 22
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 994
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Higher generation radially layered copolymeric dendrimers having a hydrophilic poly(amidoamine) or a hydrophilic poly(propyleneimine) interior and a hydrophobic organosilicon exterior are prepared by first reacting a hydrophilic **dendrimer** having --NH.sub.2 **surface** groups with an organosilicon compound, and then hydrosilating the resulting copolymeric dendrimer with another organosilicon compound in the presence of a noble metal catalyst. In an alternate embodiment, the radially layered copolymeric dendrimers are prepared by reacting a hydrophilic **dendrimer** having --NH.sub.2 **surface** groups directly with an organosilicon dendron or organosilicon hyperbranched polymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 26 OF 31 USPATFULL on STN
AN 1999:128689 USPATFULL
TI Group 4 metal-containing organosilicon **dendrimers** and method for synthesizing organosilicon denrimers
IN Seyferth, Dietmar, Lexington, MA, United States
Wyrwa, Ralf, Oelknitz, Germany, Federal Republic of
PA Massachusetts Institute of Technology, Cambridge, MA, United States (U.S. corporation)
PI US 5969073 19991019
AI US 1997-814273 19970410 (8)
RLI Continuation-in-part of Ser. No. US 1996-611495, filed on 5 Mar 1996, now abandoned which is a continuation-in-part of Ser. No. US 1996-621290, filed on 22 Mar 1996, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Marquis, Melvyn I.
LREP Wolf, Greenfield & Sacks, P.C.
CLMN Number of Claims: 76
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 2671
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Group 4 metal-containing organosilicon dendrimers are described. Also described are methods for synthesizing the dendrimers. The dendrimers can be useful in several applications including as olefin polymerization and copolymerization catalysts and as **silane** polymerization catalysts.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 27 OF 31 USPATFULL on STN
AN 1999:95885 USPATFULL
TI **Dendrimer**-based nanoscopic sponges and metal composites

IN Balogh, Lajos, Midland, MI, United States
deLeuze-Jallouli, Agnes M., Midland, MI, United States
Dvornic, Petar R., Midland, MI, United States
Owen, Michael J., Midland, MI, United States
Perz, Susan Victoria, Midland, MI, United States
Spindler, Ralph, Midland, MI, United States
PA Dow Corning Corporation, Midland, MI, United States (U.S. corporation)
Dendritech Inc., Midland, MI, United States (U.S. corporation)
PI US 5938934 19990817
AI US 1998-6573 19980113 (9)
DT Utility
FS Granted
EXNAM Primary Examiner: Dawson, Robert; Assistant Examiner: Lu-Rutt, Caixia
LREP De Cesare, James L.
CLMN Number of Claims: 17
ECL Exemplary Claim: 1,17
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 953
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Dendritic polymer based networks consisting of well-defined hydrophilic and oleophilic (i.e., hydrophobic) domains, are capable of performing as nanoscopic sponges for electrophilic guest moieties such as (i) inorganic and organic cations; (ii) charged or polarized molecules containing electrophilic constituent atoms or atomic groups; and (iii) other electrophilic organic, inorganic, or organometallic species. As a result of such performance, the networks yield novel nanoscopic organo-inorganic composites which contain organosilicon units as an integral part of their covalently bonded matrix.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 28 OF 31 USPATFULL on STN
AN 1999:56535 USPATFULL
TI **Dendrimer**-based networks containing lyophilic organosilicon and hydrophilic polyamidoamine nanoscopic domains
IN Dvornic, Petar R., Midland, MI, United States
deLeuze-Jallouli, Agnes M., Midland, MI, United States
Owen, Michael James, Midland, MI, United States
Perz, Susan Victoria, Essexville, MI, United States
PA Dow Corning Corporation, Midland, MI, United States (U.S. corporation)
Michigan Molecular Institute, Midland, MI, United States (U.S. corporation)
PI US 5902863 19990511
AI US 1997-897943 19970721 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Dawson, Robert; Assistant Examiner: Lu Rutt, Caixia
LREP De Cesare, James L.
CLMN Number of Claims: 19
ECL Exemplary Claim: 1,3
DRWN 5 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 776
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Dendrimer-based networks are prepared from copolydendrimer precursors having well defined hydrophilic polyamidoamine (PAMAM) or polypropyleneimine (PPI) interiors, and organosilicon outer layers ending with .tbd.Si--OCH.sub.3 surface groups. These networks have precisely controllable size, shape, and spatial distribution, of nanoscopic hydrophilic and hydrophobic domains. Such constructs are prepared by crosslinking one type of copolydendrimer precursor, or by crosslinking mixtures of different copolydendrimers having different generations of PAMAM or PPI dendrimers in the interior, surrounded by different organosilicon exteriors. Crosslinking can be controlled by adding difunctional, trifunctional, or polyfunctional low molecular weight or oligomeric crosslinking agents; or by exposing a copolydendrimer having hydrolyzable **surface** groups to atmospheric moisture. Elastomeric **dendrimer**-based networks have low glass temperatures of -15° C. or below, are optically clear, transparent, colorless; and have a non-stick surface which can be

formed into films of small thickness.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 29 OF 31 USPATFULL on STN
AN 94:64316 USPATFULL
TI Toner compositions with **dendrimer** charge enhancing additives
IN Duff, James M., Mississauga, Canada
Winnik, Francoise M., Toronto, Canada
Sacripante, Guerino G., Oakville, Canada
Davidson, Anthony R., Agincourt, Canada
PA Xerox Corporation, Stamford, CT, United States (U.S. corporation)
PI US 5332640 19940726
AI US 1993-93917 19930720
RLI Division of Ser. No. US 1992-922420, filed on 31 Jul 1992, now patented, Pat. No. US 5256516
DT Utility
FS Granted
EXNAM Primary Examiner: Rodee, Christopher D.
LREP Palazzo, E. O.
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1132
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A dry toner composition comprised of resin particles, pigment particles, and a dendrimer charge enhancing additive.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 30 OF 31 USPATFULL on STN
AN 93:100282 USPATFULL
TI Ink compositions with **dendrimer** grafts
IN Breton, Marcel P., Mississauga, Canada
PA Xerox Corporation, Stamford, CT, United States (U.S. corporation)
PI US 5266106 19931130
AI US 1992-964802 19921022 (7)
DCD 20090324
DT Utility
FS Granted
EXNAM Primary Examiner: Klemanski, Helene; Assistant Examiner: Einsmann, Margaret
LREP Palazzo, E. D.
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 792
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An ink composition comprised of a solution comprised of a a dye and a grafted dendrimer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 31 OF 31 USPATFULL on STN
AN 93:89524 USPATFULL
TI Toner compositions with **dendrimer** charge enhancing additives
IN Winnik, Francoise M., Toronto, Canada
Duff, James M., Mississauga, Canada
Sacripante, Guerino G., Oakville, Canada
Davidson, Anthony R., Agincourt, Canada
PA Xerox Corporation, Stamford, CT, United States (U.S. corporation)
PI US 5256516 19931026
AI US 1992-922420 19920731 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Rodee, Christopher
LREP Palazzo, E. O.
CLMN Number of Claims: 4
ECL Exemplary Claim: 1,3

DRWN No Drawings
LN.CNT 1089
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A dry toner composition comprised of resin particles, pigment particles, and a dendrimer charge enhancing additive.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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=>

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=> s dendrimer? (2a) extract?
L11         18 DENDRIMER? (2A) EXTRACT?

=> dup rem l11
PROCESSING COMPLETED FOR L11
L12          16 DUP REM L11 (2 DUPLICATES REMOVED)

=> d l12 bib abs 1-16

L12  ANSWER 1 OF 16  WPIDS  COPYRIGHT 2006 THE THOMSON CORP on STN DUPLICATE 1
AN   2005-476284 [48]   WPIDS
DNC  C2005-145185
TI   Method of dendrimer-based DNA extraction, by forming
     dendrimer molecules on walls of flow channel through which
     solution containing target DNA is flowed, binding probe to
     dendrimer and extracting target DNA by combination with
     probe.
DC   A23 A89 B04 D16
IN   FUKUSHIMA, K; MATSUNAGA, T; SATOU, S; TAKEYAMA, H
PA   (MATS-I) MATSUNAGA T; (YOKG) YOKOGAWA ELECTRIC CORP; (YOKG) YOKOGAWA DENKI
     KK
CYC  4
PI   US 2005130191   A1 20050616 (200548)*       5
     DE 102004045139 A1 20050721 (200548)
     JP 2005176613   A  20050707 (200548)        6
     CN 1637014      A  20050713 (200576)
ADT  US 2005130191 A1 US 2004-928183 20040830; DE 102004045139 A1 DE
     2004-102004045139 20040917; JP 2005176613 A JP 2003-417848 20031216; CN
     1637014 A CN 2004-98423 20041210
PRAI JP 2003-417848       20031216
AN   2005-476284 [48]   WPIDS
AB   US2005130191 A UPAB: 20050728
     NOVELTY - Method (M1) of dendrimer-based DNA extraction
     , involves forming dendrimer molecules on the walls of a flow
     channel through which a solution containing target DNA is flowed, binding
     probe DNA to the tips of the dendrimer molecules, and
     extracting the target DNA by its complementary combination with
     the probe DNA.
          DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a
     dendrimer-based biochip (I), where a flow channel through which a solution
     containing biopolymer molecules is flowed, is formed in the substrate of
     the biochip, several dendrimer molecules, one end of each of which is
     bound to the walls of the flow channel, are formed on it, probe biopolymer
     or antibody molecules are bound to the tips of the dendrimer molecules
     and, if the probe biopolymer molecules are bound, then target biopolymer
     molecules are captured by its complementary combination, and if the
     antibody molecules are bound, then protein is extracted by
     antigen-antibody reaction.
          USE - (M1) is useful for dendrimer-based DNA
     extraction (claimed).
          ADVANTAGE - (M1) enables to retrieve biopolymers such as DNA, RNA,
     and protein from affected cells, efficiently by producing dendrimer
     molecules in the flow channel of the preprocessing area of the biochip and
     by the ability of dendrimer to achieve highly efficient densities because
     of their freely controllable structural density.
          DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of the
     flow channel formed in the preprocessing area of dendrimer-based biochip.
     Dwg.1/2

L12  ANSWER 2 OF 16  USPATFULL on STN
AN     2005:131175  USPATFULL
TI     Quantification of analytes using internal standards
IN     Gentle, Thomas, Red Lion, PA, UNITED STATES
       Moore, Richard, Glenville, PA, UNITED STATES
       Winegar, Thomas, Hawthorne, NJ, UNITED STATES
       Shi, Song, Reisterstown, MD, UNITED STATES
       Jin, Zhe, Cockeysville, MD, UNITED STATES
PA     Becton, Dickinson and Company, Franklin Lakes, NJ, UNITED STATES (U.S.
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corporation)
PI US 2005112635 A1 20050526
AI US 2004-945891 A1 20040922 (10)
PRAI US 2003-504429P 20030922 (60)
DT Utility
FS APPLICATION
LREP DAVID W HIGHET VP AND CHIEF IP COUNSEL, BECTON DICKINSON AND COMPANY, 1 BECTON DRIVE, MC110, FRANKLIN LAKES, NJ, 07417-1880, US
CLMN Number of Claims: 35
ECL Exemplary Claim: 1
DRWN 2 Drawing Page(s)
LN.CNT 988
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention pertains to methods of quantifying the levels of at least one analyte in a sample or extract comprising adding a known quantity of at least one internal standard to the sample or extract. The present invention also relates to internal standards used in mass spectrometry, as well as compositions thereof. Internal standards for mass spectrometry according to the invention can be used, for example, to assist aligning mass spectra obtained from two different samples, each of which comprises the internal standard. In one aspect of the invention, the internal standard is a dendrimer. A labile internal standard may be used in conjunction with the dendrimer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 3 OF 16 USPATFULL on STN
AN 2005:123679 USPATFULL
TI Sol-gel dendron separation and extraction capillary column
IN Malik, Abdul, Tampa, FL, UNITED STATES
Kabir, Abuzar, Tampa, FL, UNITED STATES
Newkome, George R., Akron, OH, UNITED STATES
Yoo, Kyung Soo, Akron, OH, UNITED STATES
PI US 2005106068 A1 20050519
AI US 2003-716310 A1 20031118 (10)
DT Utility
FS APPLICATION
LREP SMITH & HOPEN PA, 15950 BAY VISTA DRIVE, SUITE 220, CLEARWATER, FL, 33760, US
CLMN Number of Claims: 29
ECL Exemplary Claim: 1
DRWN 18 Drawing Page(s)
LN.CNT 1773
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides for a capillary column including a tube structure having an inner surface and a sol-gel substrate bonded to a dendrimer substrate to form a sol-gel dendrimer matrix that bonds to a portion of the inner surface of the tube structure to form a surface-bonded stationary phase coating thereon. The present invention additionally provides for a capillary column including a tube structure having an inner surface, a stationary phase coating attached to a portion of the inner surface, and a dendrimer moiety bonded to the stationary phase coating. Further, a sol-gel dendrimer coated apparatus including a structure having a surface and a sol-gel substrate bonded to a dendrimer substrate to form a sol-gel dendrimer matrix coating the surface thereon is provided. The present invention also provides for a one-step method for making and preparing a column and a method of making the sol-gel and dendrimer solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 4 OF 16 MEDLINE on STN
AN 2005636154 IN-PROCESS
DN PubMed ID: 16316142
TI Hydrophobic dendrimers as templates for au nanoparticles.
AU Knecht Marc R; Garcia-Martinez Joaquin C; Crooks Richard M
CS Department of Chemistry, Texas A&M University, College Station, 77842-3012, USA.
SO Langmuir : the ACS journal of surfaces and colloids, (2005 Dec 6) Vol. 21,

No. 25, pp. 11981-6.
Journal code: 9882736. ISSN: 0743-7463.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 1 Dec 2005
Last Updated on STN: 21 Dec 2005
AB We report the synthesis, characterization, and **extraction** of Au **dendrimer**-encapsulated nanoparticles (DENs) prepared in organic solvents. DENs composed of 31 and 55 Au atoms were prepared using organic solvents and poly(amidoamine) (PAMAM) dendrimer templates modified on their periphery with dodecyl groups. The spectral and microscopic properties of the resulting materials were identical to those prepared using water-soluble PAMAM dendrimers. It was possible to extract the organic-soluble DENs into water using the water-soluble thiols tiopronin and glutathione. The properties of the resulting monolayer-protected clusters were nearly identical to those of the precursor DENs. A mechanistic model for the extraction process is discussed. The synthetic methodology reported here provides a convenient method for preparing DENs of non noble metals such as Ni and Fe.

L12 ANSWER 5 OF 16 MEDLINE on STN DUPLICATE 2
AN 2005280985 IN-PROCESS
DN PubMed ID: 15924479
TI Electrochemical properties of monolayer-protected Au and Pd nanoparticles **extracted** from within **dendrimer** templates.
AU Kim Yong-Gu; Garcia-Martinez Joaquin C; Crooks Richard M
CS Department of Chemistry, Texas A&M university, P.O. Box 30012, College Station, Texas 77842-3012, USA.
SO Langmuir : the ACS journal of surfaces and colloids, (2005 Jun 7) Vol. 21, No. 12, pp. 5485-91.
Journal code: 9882736. ISSN: 0743-7463.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 1 Jun 2005
Last Updated on STN: 14 Dec 2005
AB The electrochemical properties of Au and Pd monolayer-protected clusters (MPCs), prepared by dendrimer-templating and subsequent extraction, are described. Differential pulse voltammetry was used to estimate the size of the MPCs, and the results were compared to microscopic data and calculated values. Purification of the extracted Au and Pd nanoparticles was not required to obtain well-defined differential pulse voltammetry peaks arising from quantized double-layer charging. The calculated sizes of the nanoparticles were essentially identical to those determined from the electrochemical data. The capacitance of the particles was independent of the composition of core metal. Transmission electron microscopy data overestimated the size of the smallest Pd nanoparticles because of inadequate point-to-point resolution.

L12 ANSWER 6 OF 16 MEDLINE on STN
AN 2005030369 MEDLINE
DN PubMed ID: 15656640
TI Synthesis, characterization, and structure-selective extraction of 1-3-nm diameter AuAg dendrimer-encapsulated bimetallic nanoparticles.
AU Wilson Orla M; Scott Robert W J; Garcia-Martinez Joaquin C; Crooks Richard M
CS Department of Chemistry, Texas A&M University, P.O. Box 30012, College Station, Texas 77842-3012, USA.
SO Journal of the American Chemical Society, (2005 Jan 26) Vol. 127, No. 3, pp. 1015-24.
Journal code: 7503056. ISSN: 0002-7863.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; PUBMED-NOT-MEDLINE
EM 200504

ED Entered STN: 20 Jan 2005
Last Updated on STN: 21 Apr 2005
Entered Medline: 20 Apr 2005
AB The synthesis and characterization of 1-3-nm diameter, structurally well-defined, bimetallic AuAg dendrimer-encapsulated nanoparticles (DENs) are reported. Three different bimetallic structures were examined: AuAg alloys synthesized by cocomplexation and subsequent reduction of dendrimer-encapsulated Au3+ and Ag+ and core/shell [Au](Ag) and [AuAg alloy](Ag) structures (for structured materials, brackets indicate the core metal and parentheses indicate the shell metal) synthesized by a sequential loading method. Depending on the shell metal and its oxidation state, the AuAg nanoparticles can be **extracted** from the **dendrimer** into an organic phase using different surfactants. This provides a means for analyzing the composition of the shell. UV-vis, TEM, and single-particle X-ray energy dispersive spectroscopy (EDS) were used to characterize the bimetallic DENs before and after extraction and show that the extraction step does not alter the size or composition of the bimetallic nanoparticles.

L12 ANSWER 7 OF 16 MEDLINE on STN
AN 2004611824 MEDLINE
DN PubMed ID: 15584753
TI Extraction of Au nanoparticles having narrow size distributions from within dendrimer templates.
AU Garcia-Martinez Joaquin C; Crooks Richard M
CS Department of Chemistry, Texas A&M University, P.O. Box 30012, College Station, Texas 77842-3012, USA.
SO Journal of the American Chemical Society, (2004 Dec 15) Vol. 126, No. 49, pp. 16170-8.
Journal code: 7503056. ISSN: 0002-7863.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; PUBMED-NOT-MEDLINE
EM 200502
ED Entered STN: 9 Dec 2004
Last Updated on STN: 16 Feb 2005
Entered Medline: 15 Feb 2005
AB Here, we show that Au nanoparticles having diameters of less than 2.2 nm can be extracted from within the interior of PAMAM dendrimers using n-alkanethiol extractants. Extraction proceeds quickly, regardless of the size of the nanoparticle, the dendrimer generation, or the peripheral functionalization of the dendrimer. The extraction rate is fastest for the lowest generation dendrimers, the smallest nanoparticles, and the shortest chain-length n-alkanethiols. Other important results of this study include the following. First, within the accuracy of absorbance spectroscopy, the extraction yield is quantitative. Second, NMR and FT-IR spectroscopy indicate that after **extraction** the **dendrimer** remains in the aqueous phase and can be used to template additional metal particles. Third, the size and optical characteristics of the extracted nanoparticles are the same as the precursor dendrimer-encapsulated nanoparticles (DENs). Fourth, a 100-fold excess of n-alkanethiol molecules is required to prevent aggregation of DENs during extraction.

L12 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:832895 CAPLUS
DN 142:12060
TI Separation of Dendrimer-Encapsulated Au and Ag Nanoparticles by Selective Extraction
AU Wilson, Orla M.; Scott, Robert W. J.; Garcia-Martinez, Joaquin C.; Crooks, Richard M.
CS Department of Chemistry, Texas A+M University, College Station, TX, 77842-3012, USA
SO Chem. Mater. (2004), 16(22), 4202-4204
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English

AB We report here the separation of gold and silver dendrimer-encapsulated nanoparticles from an aqueous mixture of the two using a selective extraction approach.
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 9 OF 16 USPATFULL on STN
AN 2003:195194 USPATFULL
TI Chemoselective dendrimeric compounds for use in chemical sensors
IN Houser, Eric, Nokesville, VA, UNITED STATES
McGill, Robert, Lorton, VA, UNITED STATES
PI US 2003135005 A1 20030717
US 6617040 B2 20030909
AI US 2002-46298 A1 20020116 (10)
DT Utility
FS APPLICATION
LREP NAVAL RESEARCH LABORATORY, ASSOCIATE COUNSEL (PATENTS), CODE 1008.2, 4555 OVERLOOK AVENUE, S.W., WASHINGTON, DC, 20375-5320
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN 2 Drawing Page(s)
LN.CNT 932
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a device for selective molecular recognition, the device comprising a sensing portion, wherein said sensing portion includes a substrate having coated thereon a layer comprising a dendrimeric compound having:

(1) a core portion;

(2) at least one unsaturated arms extending radially from the core portion; and

(3) at least one halogen substituted alcohol or phenol group substituted at the terminus, the interior, or both of each;

The device is used to detect the molecules of a hydrogen bond accepting vapor such as organophosphorus or nitroaromatic species.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 10 OF 16 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:6989 CAPLUS
DN 138:304806
TI Hyperbranched polymers: new selective solvents for extractive distillation and solvent extraction
AU Seiler, M.; Kohler, D.; Arlt, W.
CS Fachgebiet Thermodynamik und Thermische Verfahrenstechnik, Institut fuer Verfahrenstechnik, Technical University of Berlin, Berlin, D-10623, Germany
SO Separation and Purification Technology (2003), 30(2), 179-197
CODEN: SPUTFP; ISSN: 1383-5866
PB Elsevier Science B.V.
DT Journal
LA English
AB Ternary vapor-liquid (VLE), liquid-liquid (LLE) and solid-liquid-liquid (SLLE) equilibrium of ethanol-water and THF -water solns. containing different kinds of hyperbranched polymers are presented. For the system THF-water-hyperbranched polyester a remarkably distinct solutropic phenomenon is observed Com. available hyperbranched polyesters and hyperbranched polyesteramides are found to be capable of breaking the ethanol-water and THF-water azeotrope. The exptl. results underline the potential of hyperbranched polymers in the field of process engineering, especially as an entrainer for extractive distillation and as selective solvents for solvent extraction The non-volatility of hyperbranched polymers in combination with their remarkable separation efficiency and selectivity enables new processes for the separation of azeotropic mixts. The separation approaches proposed might offer a potential for cost-savings in comparison with conventional separation processes.

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 11 OF 16 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2002-471263 [50] WPIDS
DNC C2002-133953
TI Novel anhydride for preparation of dendrimers useful as supports, vectors, carriers or delivery vehicles for variety of compounds in biomedical and technological applications.
DC A23 A96 B07 E19
IN FRECHET, J J; IHRE, R H
PA (REGC) UNIV CALIFORNIA
CYC 97
PI WO 2002026867 A2 20020404 (200250)* EN 94
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001095073 A 20020408 (200252)
US 2002123609 A1 20020905 (200260)
AU 2001295073 A8 20050915 (200569)
ADT WO 2002026867 A2 WO 2001-US42310 20010925; AU 2001095073 A AU 2001-95073 20010925; US 2002123609 A1 Provisional US 2000-236561P 20000929, US 2001-963858 20010925; AU 2001295073 A8 AU 2001-295073 20010925
FDT AU 2001095073 A Based on WO 2002026867; AU 2001295073 A8 Based on WO 2002026867
PRAI US 2000-236561P 20000929; US 2001-963858 20010925
AN 2002-471263 [50] WPIDS
AB WO 200226867 A UPAB: 20020807
NOVELTY - Anhydrides (I) are new.
DETAILED DESCRIPTION - Anhydrides of formula (I) are new.
R1-R4 = (un)substituted alkyl, heteroalkyl or aryl group;
INDEPENDENT CLAIMS are also included for:
(1) a dendrimer which is free of urea impurities, containing sub-units of formula -A-C(O)C(Me)(CH2OR6)CH2(OR5);
(2) a biological compartment comprising a membrane defining an interior space comprising the dendrimer having sub-units of formula (V);
(3) production of protected first generation dendrimer having sub-units of formula (VI) by forming a reaction mixture by contacting a core moiety comprising active group residue A with an acylating group of formula (VII) in an organic solvent and extracting the reaction mixture with an aqueous solution to remove impurities;
(4) production of protected second generation dendrimer having sub-units of formula (VIII) by contacting the first generation dendrimer with an acylating group (VII) to form a **dendrimer** and **extracting** the reaction mixture with an aqueous solution to remove impurities; and
(5) a method of enhancing water-solubility of an agent comprising formation of a conjugate between the agent and dendrimer comprising sub-units of formula (IX).
A = active group residue selected from NH, S or O;
R5, R6 = H, diagnostic agent, therapeutic agent, analytical agent, or moieties comprising a reactive group; or
R5+R6+ O atoms = a group of formula -OCH(Ph)O- or -OC(R3)(R4)O-;
R8 = nucleic acid;
R9, R10 = H or polyethylene oxide residue;
R13, R14 = H, (un)substituted (hetero)alkyl or aryl group;
provided that when R13 = H, R14 is not H.
USE - (I) Are useful for the preparation of wide array of dendrimers and dendrimer conjugates which are useful carriers for diverse agents including analytical, therapeutic and diagnostic agents; useful in rendering water-soluble normally insoluble drugs or other agents; useful for delivery of therapeutic, diagnostic and analytical agents both extra-and intra-cellularly, particularly genetic material, imaging components or functional molecule. The carriers are used for targeting specific organs, tumors or tissues.
ADVANTAGE - The anhydride forms dendrimers of such purity that they

are generally isolated as solids. The use of isolated, purified anhydride as reactive building block in dendrimer formation, provides products having high level of structural homogeneity. The dendrimer has low level of toxicity, high water solubility, and is eliminated from the body through normal path-ways such as through urine. The dendrimers are able to release drugs in cancer cells. Certain dendrimers such as polyethylene oxide based dendrimers, are able to penetrate cells.
Dwg.0/0

L12 ANSWER 12 OF 16 USPATFULL on STN
AN 2002:228446 USPATFULL
TI Dendrimeric support or carrier macromolecule
IN Frechet, Jean J., Oakland, CA, UNITED STATES
Ihre, Rolf H., Stockholm, SWEDEN
PA The Regents of the University of California, Oakland, CA (U.S. corporation)
PI US 2002123609 A1 20020905
AI US 2001-963858 A1 20010925 (9)
PRAI US 2000-236561P 20000929 (60)
DT Utility
FS APPLICATION
LREP TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
CLMN Number of Claims: 48
ECL Exemplary Claim: 1
DRWN 6 Drawing Page(s)
LN.CNT 3331
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a family of dendrimers that are useful as supports, vectors, carriers or delivery vehicles for a variety of compounds in biomedical and technological applications. In particular, the macromolecules may be used for the delivery of drugs, genetic material, imaging components or other functional molecule to which they can be conjugated. An additional feature of the macromolecules is their ability to be targeted for certain organs, tumors, or types of tissues.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:252680 CAPLUS
DN 133:31139
TI Energy Transfer in Supramolecular Assemblies of Oligo(p-phenylene vinylene)s Terminated Poly(propylene imine) Dendrimers
AU Schenning, Albertus P. H. J.; Peeters, Emiel; Meijer, E. W.
CS Laboratory of Macromolecular and Organic Chemistry, Dutch Polymer Institute Eindhoven University of Technology, Eindhoven, 5600 MB, Neth.
SO Journal of the American Chemical Society (2000), 122(18), 4489-4495
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
AB Poly(propylene imine) dendrimers have been functionalized with π-conjugated oligo(p-phenylene vinylene)s (OPV's) through an amide linkage and are fully characterized. In solution the dendrimers behave as globular entities without specific interactions between the OPV units. The OPV dendrimers have an amphiphilic nature and self-assemble at the air-water interface forming stable monolayers in which the dendritic surfactants presumably adopt a cylindrical shape; all the OPV's are aligned perpendicular to the water surface, and the dendritic poly(propylene imine) cores face the aqueous phase. Optical spectra taken from Langmuir-Blodgett films show a small blue shift indicative of interactions between the OPV units. Spin-coated homogeneous thin films could be obtained from solns. containing dendrimers loaded with dyes. The optical properties of these films are similar to the Langmuir-Blodgett films which points to the same type of organization of the OPV's. The OPV **dendrimers** are effective **extractants** of anionic dye mols. from water to organic solvents. Ratios between dye and dendrimer can be easily tuned by varying the concentration of dye in the water layer. The host-guest assemblies show not complete energy transfer from the OPV units

to the encapsulated dye mols. in solution The energy transfer is very efficient in spin-coated films of dendrimer/dye assemblies and the emission wavelength can be adjusted by using a variety of dye mols. The dendrimer/dye systems mix very well with poly(p-phenylene vinylene)s (PPV's) forming good quality thin films in contrast to films obtained from dye/PPV without dendrimer. The OPV units in the dendrimer act as a compatibilizer in these systems and energy transfer is observed from the organic PPV polymer to the dye. It gives the possibility of tuning the emission wavelength of the PPV thin films by using the appropriate encapsulated dye.

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 14 OF 16 USPATFULL on STN
AN 1998:91624 USPATFULL
TI Dendrimer and an active substance occluded in the dendrimer, a process for the preparation thereof and a process for releasing the active substance
IN Jansen, Johan F. G. A., Eindhoven, Netherlands
Meijer, Egbert W., Waalre, Netherlands
De Brabander-Van Den Berg, Ellen M. M., Schinnen, Netherlands
PA DSM N.V., Netherlands (non-U.S. corporation)
PI US 5788989 19980804
AI US 1995-454026 19950530 (8)
PRAI NL 1994-880 19940527
NL 1994-1886 19941111
DT Utility
FS Granted
EXNAM Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Cheng, Wu C.
LREP Cushman Darby & Cushman IP Group of Pillsbury Madison & Sutro, LLP
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 974
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a dendrimer composition in which an effective number of the terminal functionalities are provided with blocking agents, and at least one active substance species is occluded in the dendrimer. A blocking agent is a sufficiently sterically sized compound which readily enters into a chemical bond with a terminal group of a dendrimer but which can also be split off from the dendrimer or can be modified without affecting the chemical structure of the dendrimer and the occluded active substance. The blocking agent can also be provided with a protecting group. The time and duration over which an active substance is released can be controlled. The invention also relates to a process for the preparation of such a composition and to a process for the controlled release of the active substance.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 15 OF 16 USPATFULL on STN
AN 1998:11719 USPATFULL
TI Bioactive and/or targeted dendrimer conjugates
IN Tomalia, Donald A., Midland, MI, United States
Baker, James R., Ann Arbor, MI, United States
Cheng, Roberta C., Midland, MI, United States
Bielinska, Anna U., Ypsilanti, MI, United States
Fazio, Michael J., Midland, MI, United States
Hedstrand, David M., Midland, MI, United States
Johnson, Jennifer A., Livonia, MI, United States
Kaplan, deceased, Donald A., late of Marina del Rey, CA, United States
by Margorie Kaplan, executor
Klakamp, Scott L., Russell, PA, United States
Kruper, Jr., William J., Sanford, MI, United States
Kukowska-Latallo, Jolanta, Ann Arbor, MI, United States
Maxon, Bartley D., St. Louis, MI, United States
Piehler, Lars T., Midland, MI, United States
Tomlinson, Ian A., Midland, MI, United States
Wilson, Larry R., Beaverton, MI, United States

Yin, Rui, Mt. Pleasant, MI, United States
Brothers, II, Herbert M., Midland, MI, United States
PA The Dow Chemical Company, Midland, MI, United States (U.S. corporation)
Dendritech Incorporated, Midland, MI, United States (U.S. corporation)
The Regents of the University of Michigan, Ann Arbor, MI, United States (U.S. corporation)
PI US 5714166 19980203
AI US 1995-400203 19950307 (8)
RLI Continuation-in-part of Ser. No. US 1994-316536, filed on 30 Sep 1994, now abandoned which is a continuation-in-part of Ser. No. US 1994-207494, filed on 7 Mar 1994, now abandoned which is a division of Ser. No. US 1993-43198, filed on 5 Apr 1993, now patented, Pat. No. US 5527524, issued on 18 Jun 1996 And a continuation-in-part of Ser. No. US 1993-43198, filed on 5 Apr 1993, now patented, Pat. No. US 5527524, issued on 18 Jun 1996 which is a continuation-in-part of Ser. No. US 1991-654851, filed on 13 Feb 1991, now patented, Pat. No. US 5338532, issued on 16 Aug 1994 which is a continuation-in-part of Ser. No. US 1989-386049, filed on 26 Jul 1989, now abandoned which is a continuation-in-part of Ser. No. US 1987-87266, filed on 18 Aug 1987, now abandoned which is a continuation-in-part of Ser. No. US 1986-897455, filed on 18 Aug 1986, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Kishore, Gollamudi S.
LREP Kimble, Karen L.
CLMN Number of Claims: 136
ECL Exemplary Claim: 1
DRWN 89 Drawing Figure(s); 68 Drawing Page(s)
LN.CNT 7574
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Dendritic polymer conjugates which are composed of at least one dendrimer in association with at least one unit of a carried material, where the carrier material can be a biological response modifier, have been prepared. The conjugate can also have a target director present, and when it is present then the carried material may be a bioactive agent. Preferred dendritic polymers are dense star polymers, which have been complexed with biological response modifiers. These conjugates and complexes have particularly advantageous properties due to their unique characteristics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1996:304020 CAPLUS
DN 124:344485
TI Manufacture of dendrimers with removal of residual reactants and byproducts by supercritical extraction
IN De Brabander-Van den Berg, Ellen Marleen Monique; De Haan, Andre Banier
PA Dsm N. V., Neth.
SO PCT Int. Appl., 17 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9602588	A1	19960201	WO 1995-NL249	19950717
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
NL 9401179	A	19960301	NL 1994-1179	19940718
PRAI NL 1994-1179	A	19940718		

AB In manufacturing dendrimers by reacting a starting compound successively in different reaction steps with (same or different) reactant in each of successive steps, in ≥1 of the steps the excess of the reactant is extracted with an extraction agent in a supercrit. state. The extraction agent may also contain an entrainer. For example, passing a flow of 400 g CO2 for 45 min at 180 bar and 313°K through 20 g of a 2nd-generation dendrimer obtained by reacting H2N(CH2)4NH2 with acrylonitrile (AN), hydrogenation, and repeated addition of AN (preparation not given) gave a dendrimer containing 0.01%

AN.

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     (FILE 'HOME' ENTERED AT 10:04:47 ON 26 MAY 2006)

     FILE 'BIOSIS, MEDLINE, CAPLUS, WPIDS, USPATFULL' ENTERED AT 10:05:03 ON
     26 MAY 2006
L1          7519 S DENDRIMER?/TI
L2           919 S L1 AND SURFACE? (5A) DENDRIMER?
L3             0 S L2 AND AMINO SLIANE
L4             8 S L2 AND AMINO SILANE
L5             5 DUP REM L4 (3 DUPLICATES REMOVED)
L6            45 S L2 AND SILANE
L7            37 S L6 NOT L4
L8            33 DUP REM L7 (4 DUPLICATES REMOVED)
L9             2 S L8 AND ATTACH? (4A) SILANE
L10           31 S L8 NOT L9
L11           18 S DENDRIMER? (2A) EXTRACT?
L12           16 DUP REM L11 (2 DUPLICATES REMOVED)

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